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1   **1. (currently amended)** A method of adding a watermark to a sequence of executable instructions

2   to render the sequence authenticatable,

3   the method comprising the steps of:

4   receiving the sequence of executable instructions and a key; and

5   using the key to modify the sequence of executable instructions so that the watermark may

6   be obtained from the modified sequence, the sequence being modified such that the usefulness of

7   the modified sequence for the sequence's intended purpose is not affected by the modifications

8   made thereto and the watermark representing a watermark value which may be employed to

9   authenticate the sequence, alteration or absence of the watermark value being used when the

10   sequence is authenticated to determine whether the sequence is authentic.

1   **2. (canceled)**

1   **3. (previously presented)** The method set forth in claim 2 wherein the step of modifying the

2   sequence includes the steps of:

3   using the key to determine locations in the sequence including modification locations at

4   which the sequence is to be modified; and

5   modifying the sequence at the modification locations such that the locations specified by

6   the key represent the watermark value,

7   whereby the watermark value may be obtained from the modification locations.

1   **4. (original)** The method set forth in claim 3 wherein the step of modifying the sequence includes

2   the step of:

3   inserting one or more executable instructions at each of the modification locations, the

4   inserted instructions having no effect on any output from the execution of the sequence of

5   instructions.

1   **5.** (original) The method set forth in claim 4 wherein:

2   the instructions at the locations specified by the key represent values of digits of the

3   watermark value.

1   **6.** (original) The method set forth in claim 1 further comprising the step of:

2   providing the watermark value to an authenticating entity that authenticates the

3   watermarked code.

1   **7.** (original) The method set forth in claim 1 further comprising the step of:

2   providing the key to the authenticating entity.

1   **8.** (previously presented) The method set forth in claim 1 wherein:

2   the modified sequence of executable instructions is modified such that when the modified

3   sequence of executable instructions is executed, execution state is produced which has a property

4   that depends on the key,

5   whereby the watermark value is a description of execution state from the modified sequence.

1   **9.** (previously presented) The method set forth in claim 8 wherein:

2   the execution state is a stack depth graph.

1   **10.** (original)The method set forth in claim 9 wherein:

2   the execution state is output from the execution.

1   **11.** (original) The method set forth in claim 10 wherein:

2   the property is an order of elements in the output.

1   **12.** (original) The method set forth in claim 10 wherein:

2   the property is an additional element in the output.

1   **13.** (original) The method set forth in claim 10 wherein:

2   the property is a class of an element in the output.

1   **14.** (original) The method set forth in claim 10 wherein:

2   the property is a constraint that is satisfied by elements of the output.

1   **15.** (original) The method set forth in claim 8 further comprising the step of:

2   providing a description of the produced execution state to an authenticating entity that

3   authenticates the watermarked code.

1   **16.** (original) The method set forth in claim 15 further comprising the step of:

2   providing the key to the authenticating entity.

1   **17.** (previously presented) The method set forth in claim 1 further comprising the step of

2   providing the key to an authenticating entity that authenticates the sequence.

1   **18.** (currently amended) A method of authenticating a watermarked sequence of executable

2   instructions, the watermark having been produced by modifying the sequence according to a key

3   such that certain of the instructions in the sequence represent a watermark value,

4   the method comprising the steps of:

5   receiving the watermarked sequence or a copy thereof;

6   using the key to locate the certain instructions in the received sequence and read the

7   watermark value; and

8   using ~~the watermark value~~<u>alteration or absence of the watermark value</u> to determine

9   whether the received sequence is authentic.

1   **19.** (currently amended) The method of authenticating set forth in claim 18, the method further

2   comprising the step of:

3   receiving another watermark value; and

4   in the step of using <u>alteration or absence of the watermark value</u>~~the watermark value~~ to

5   determine whether the received sequence is authentic, the watermark value is compared to the

6   other watermark value.

1   **20.** (original) The method of authenticating set forth in claim 19, the method further comprising

2   the step of:

3   receiving the key.

1   **21.** (currently-amended) A method of authenticating a ~~watermarked~~ sequence of executable

2   instructions <u>that has been watermarked</u>, ~~the watermark having been produced~~ by modifying the

3   sequence according to a key such that when the sequence is executed, <u>first</u> execution state is

4   produced,

5   the method comprising the steps of:

6   receiving a description of ~~the~~ <u>second</u> execution state; and

7   ~~authenticating the watermarked sequence by confirming that~~<u>if</u> the received description

8   <u>does not</u> describe <u>the first</u> ~~s~~ execution state ~~produced by an execution of the modified sequence~~,

9   <u>determining that the sequence of executable instructions whose execution produced the second</u>

10   <u>execution state is not authentic.</u>

1   **22.** (currently amended) The method set forth in claim 21 further comprising the step of:

2   receiving another description of the execution state, the other description describing

3   execution state produced by the execution of the modified sequence; and

4   in the step of ~~authenticating~~<u>determining</u>, comparing the description and the other

5   description.

1   **23.** (original) The method set forth in claim 22 wherein:

2   the other description is a stack depth graph.

1   **24.** (currently amended) The method set forth in claim 21 wherein the execution state is output

2   from the execution, the output having a property which can be determined using the key and

3   the method further comprises the steps of:

4   receiving the output from the execution; and

5   the step of ~~authenticating~~<u>determining</u> includes the steps of

6   receiving the execution state;

7   employing the key to determine the property; and

8   comparing the determined property with the received description.

1   **25.** (original) The method set forth in claim 24 wherein:

2   the determined property is an order of elements in the output.

1   **26.** (original) The method set forth in claim 24 wherein:

2   the determined property is an additional element in the output.

1   **27.** (original) The method set forth in claim 24 wherein:

2   the determined property is a class of an element in the output.

1   **28.** (original) The method set forth in claim 24 wherein:

2   the determined property is a constraint that is satisfied by elements of the output.